

137-58-5-11147

TELUSHKIN, N.V.

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 321 (USSR)

AUTHORS: Telushkin, N.V., Rybalka, T.M., Khlystun. V.G.

TITLE: The Employment of Semiautomatic and Automatic Devices for the Determination of the Carbon Content in Cast Iron and Steels (Primeneniye poluavtomaticheskikh i avtomaticheskikh apparatov dlya opredeleniya soderzhaniya ugleroda v chugunakh i stalyakh)

PERIODICAL: Tr. Nauchno-tekhn. o-va chernoy metallurgii. Ukr. resp. pravl., 1956, Vol 4, pp 61-64. Comments, pp 65-66

ABSTRACT: It is shown that it is possible to employ automatic devices for the determination of C in cast irons and steels. A system was developed and adapted whereby CO₂ is automatically absorbed by lye. The sample is pumped from a buret into the absorber by means of pressurized O₂ which is supplied automatically through an electromagnetically energized solenoid stopcock. A diagram of the automatic device is shown. A number of electrical blocking circuits effect the switching of the stopcock, supply O₂ to the furnace, and control the withdrawal of specified quantities of gas for sampling purposes, the pumping of the gas to be

Card 1/2

137-58-5-11147

The Employment of Semiautomatic (cont.)

absorbed, etc. The automatic apparatus is employed in the laboratory of the Yenakiyevo plant.

1. Carbon--Determination 2. Metals--Analysis 3. Laboratory equipment
--Design

Yu. B.

Card 2/2

SOV/137-59-5-9910

Translation from: Referativnyy zhurnal, Metallurgiya, 1959, Nr 5, pp 65 - 66
(USSR)

AUTHOR: Telushkin, N.V.

TITLE: Improved Control of Blowing Cast Iron in a Converter

PERIODICAL: Byul. nauchno-tekhn. inform. Ukr. n.-i. in-t metallov, 1958,
Nr 6, pp 67 - 80

ABSTRACT: The author describes methods of improved checking and control of the steel making technology. The use of vapor-oxygen blast instead of bottom air blast reduced the smelting time from 13 - 15 to 7 - 9 minutes and increased the output from 87 - 89 to 91 - 94%. The author developed and described an automatic temperature control system for the cast iron blowing in a Bessemer converter, using a primary pyrometer of a special design. The author describes the design of a converter pyrometer head, and the circuit diagram of the thermocouples of the measuring element. During the experimental measurement of the pool temperature in the process, compressed air at a pressure

Card 1/2

SOV/137-59-5-9910

Improved Control of Blowing Cast Iron in a Converter

of 1.5 kg/cm^2 was used for the protective blow-off of the blast to prevent that the slag and the metal were spattered into the device through the inspection hole. The author describes an automatic temperature control system maintaining the established optimum rate of temperature increase, the programmed changes in the blast and vapor supply (with air blast) or the O_2 vapor ratio during the smelting stages. The advantages of the developed converter pyrometer are enumerated. The device is recommended for the use in converter, blast furnace, open-hearth shops and for temperature measurements of coke furnaces and small rotating furnaces in roasting shops of cement plants. ✓

N.S.

Card 2/2

18.5100

AUTHORS: Milayev, A. P. (P. A. Milayev, A. A. [Terminology of Technical Drawing], 1960), N. V. Terent'ev, L. S. Kurlov, A. I. Samoylov, L. N. Polyakov, M. M. Ippolitskiy, I. A., deceased [Terminology]

TITLE: Two-Line Rolling With Repeaters of Deformed Concrete Reinforcing Bars

PERIODICAL: ²⁰⁻Stal', 1960, No. 1, pp 24-24; (USSR)

ABSTRACT: The introduction of two-line rolling of deformed concrete reinforcing bars on a redesigned small section 280 mm mill at Yenakievo Plant (Yenakievskiy metallurgicheskiy zavod) has increased the mill's hourly productivity by about 70%. The rolling is almost fully mechanized and automated by the addition of two-line repeaters in front and in the rear part of the mill. The following participated in the work: N. A. Abramenko, A. P. Mikhal'shenko, I. M. Galakhov, I. I. Ivashov, A. A. Gusekov, L. P. Antaryuk, N. K. Nikolenko, V. A. Ferrazskiy, V. D. Syrovatnikov, P. S. Bogomolov, R. V. Khabakhi, I. Berestetskiy,

Card 1/7

Two-Line Rolling With Repeaters of
Deformed Concrete Reinforcing Bars

1983

SOV/131-60 3-12/84

N. I. Pendyurin, V. G. Malinovsky, Z. I. Ber (deceased), G. E. Shcherbina, S. S. Aptekari, K. F. Koshelevko, and a team of workers of the small section rolling shop. Modernization of the mill was started in 1952 by the installation of (1) mechanized cooler; (2) flying shears; (3) three-stand continuous two-row recuperative furnace with mechanized metal supply and delivery; (4) tilting table; (5) electric 1,70-hp motor; (6) electric motor for the roughing line. Of the various methods of two-line rolling tried at the mill, the arrangement shown in Fig. 2 was accepted as most satisfactory. Two-line rolling required the use of a vertical repeater on the roughing line and a two-rough horizontal repeater in front of the finishing line (Figs. 5 and 7). The above repeaters are simple in design and reliable in performance. Forged steel delivery guides used in the mill are produced by hot twisting, at 900-950°C, to the required angle of turning. There are 10 figures, 1 table and 3 Soviet references.

Card 2/7

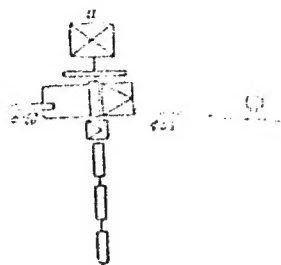
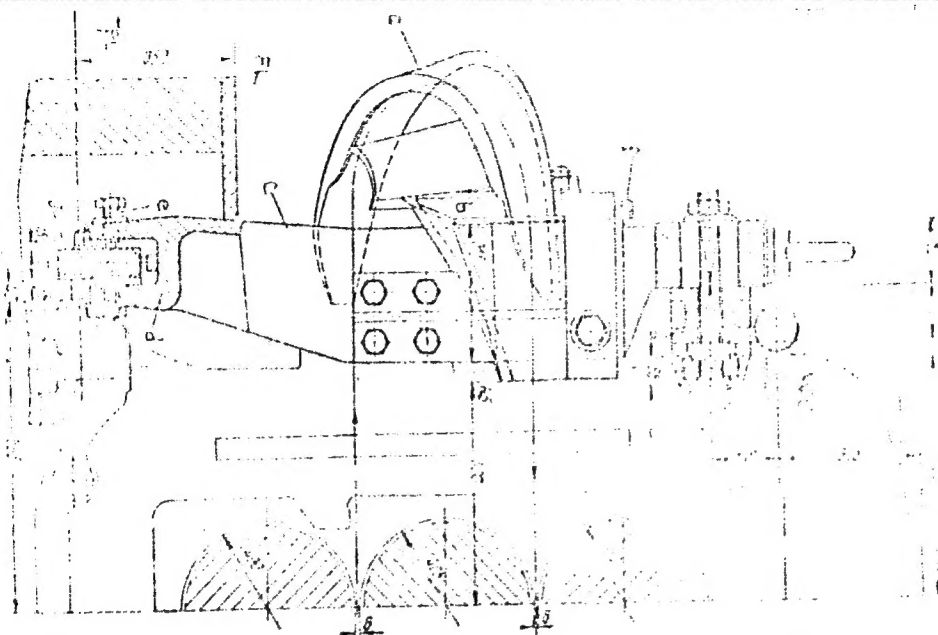


Fig. 2. Schematic diagram of the mill on 280 mm mill at Kramatorsk Plant. (a) 280 mm reducing line; (b) 325 mm reducing line; (c) 180 mm finishing line.

Card 5/7



Card 4/7

(Caption to Fig. 1 on Card 3/7)

Two-Line Roll-in with R...
Deformed Concrete Reinforcement Bar

12/24

Fig. 5. Vertical repeat... which roughing
line: (a) body (trough); (b) ... stand; (d)
rack; (e) screwdown; (f) ... traverse;
(h) bottom traverse; (i) ... floor
level; (TPL) top plate level

Card 5/7

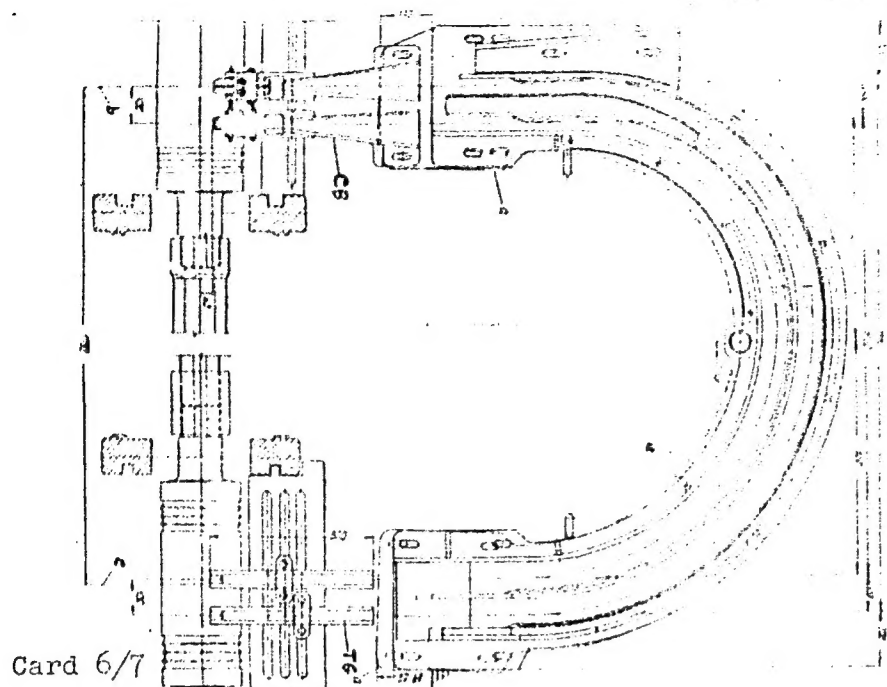


Fig. 7.
(Caption on
Card 7/7)

ZELENIN, A.N., doktor tekhn. nauk; ROVINSKIY, M.I., kand. tekhn. nauk;
ZAKHARCHUK, B.Z., inzh.; TELUSHKIN, V.D., inzh.

Investigating the loosening of limestone. Gor. zhur. no. 5:12-14
My '65. (MIRA 18:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut stroitel'nogo i
dorozhnogo mashinostroyeniya, Moskva.

ZAKHARCHUK, B.Z., inzh.; SIRENKO, V.N., inzh.; TELUSHKIN, V.D., inzh.;
YAKOBASHVILI, O.P., inzh.

Seismic method of determining the solidity of limestone. Stroi. mat.
11 no.6:5-6 Je '65. (MIRA 19:7)

TELUSHKINA, M.P.

Effect of annealing temperatures on the structure and quality
of LK80-ZL brass. Lit. proizv. no.8:40 Ag '61.

(MIRA 14:7)

(Brass founding)

(Copper-silicon-zinc alloys—Heat treatment)

BYKOV, V.A.; VSEVOLODOV, G.N.; TELUSHKINA, M.P.

Rapid testing of cast brass for corrosion cracking. Zav.lab. 23
no.8:954-956 '62. (MIRA 15:11)

1. Leningradskiy korablestroitel'nyy institut.
(Brass--Corrosion)

E-1 05030-57 EMT(m) GD

ACC NR: AT6031233

SOURCE CODE: UR/0000/65/000/000/0001/0015

AUTHOR: Zykova, A. S.; Yartsev, Ye. I.; Yefremova, G. P.; Rublevskiy,
V. P.; Telushkina, Ye. L.

ORG: none

TITLE: Data on the relationship between the amount of strontium-90 and
cesium-137 in the surrounding environment and the human organism

SOURCE: USSR. Gosudarstvennyy komitet po ispol'zovaniyu atomnoy energii.
Doklady, 1965. Nekotoryye dannyye o zavistimosti mezhdru soderzhaniyem
strontsiya-90 i tseziyz-137 v okruzhayushchey srede i organizme lyudey, 1-15

TOPIC TAGS: strontium, cesium, strontium 90, cesium 137, atmospheric
strontium, fallout strontium, atmospheric cesium, human skeleton strontium
accumulation, human skeleton cesium accumulation

ABSTRACT: Data are presented on the concentration of strontium-90 and
cesium-137 in the atmosphere, in fallout, and in milk, and of strontium-90
in the human skeletal system. The data are based on long-term observations
made between 1958—1964. The concentration of strontium-90 and cesium-137

Card 1/2

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S/089/61/010/003/007/021
B102/B205

21.8000

AUTHORS: Sivintsev, Yu. V., Knizhnikov, V. A., Telushkina, Ye. L.,
Turkin, A. D.

TITLE: Study of the radioactive contamination of air and of the
Neva river during the time in which the atomic ice-breaker
"Lenin" was anchored

PERIODICAL: Atomnaya energiya, v. 10, no. 3, 1961, 253-258

TEXT: This is a report on an investigation of the radioactive contamination
in the neighborhood of the place where the atomic ice-breaker "Lenin" was
anchored in the Neva river, with its atomic engine being in operation. The
investigation included the atmosphere, the river water, and the fauna and flora
in the surrounding area. The experiments were begun on August 6, 1959 and
finished on September 14, 1959. The concentration of radioactive gases
was also examined in closed rooms in the ship's central part. Results are
discussed in the introduction. Measurements were made with cylindrical
counters of the type CTC-5 (STS-5) and with end-window counters of the type
БФЛ-50 (BFL-50) which measured concentrations of up to $2 \cdot 10^{-11}$ curie/l and

Card 1/3

20177

Study of the ...

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10^{-10} curie/l (Ar^{41}). Radioactive aerosols were determined with $\Phi\pi$ (FP) filters, the activity of which was measured in the laboratory. In the central parts of the ship, radioactivity caused by Ar^{41} did not exceed $4 \cdot 10^{-10}$ curie/l, was 10^{-11} curie/l on the average. These values amount to 1% of the permissible maximum dose in working rooms. In addition, the radioactivity of air leaving the Grosssegelmast (sic!) was measured. Its maximum activity was 10^{-9} curie/l, and the average was $2 \cdot 10^{-10}$ curie/l referred to one atomic unit with 100% performance. This level was reached on September 5, 1959 when the three atomic units operated with 45, 40, and 20% performance. As 70,000 m^3 of air were exhausted in one hr, the emission of one unit with 100% performance was 0.014 curie/hr. Investigations in the case of a leakage of the primary cooling circuit showed that radioactivity in the servodrive rooms reached a level of $3 \cdot 10^{-8}$ curie/l and was chiefly caused by short-lived fission products, such as Kr^{85} , Kr^{88} , and Xe^{135} ($T_{1/2} = 5-7$ hr). The concentration of β -active aerosols in the central rooms of the ship never exceeded the background values of the natural radioactivity. The observed fluctuations in the radioactivity of air, river water, fauna and flora in the neighborhood of the ship had a

Card 2/3

20177

Study of the ...

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merely seasonal character and did not depend on the stay of the ship and the operation of her reactors. Pertinent measurements were made from June 15 to September 14. These seasonal fluctuations are held responsible for the fact that the radioactivity of air, water, fauna, and flora prior to the tests of the units of the atomic ice-breaker was higher than during the tests. Numerous data on the seasonal fluctuations which dropped to a minimum in August, and results of measurements are discussed. The experiments have proved unambiguously that the ice-breaker operates without any hazard, and that there is not the slightest danger of contamination on board the ship during the operation of its reactors. Neither the crew of the ship nor the vessels following the ice-breaker are exposed to the action of radioisotopes. There are 2 figures and 3 Soviet-bloc references. X

SUBMITTED: September 7, 1960

Card 3/3

GRUZ SSR / Human and Animal Physiology. Liver.

T

Abs Jour: Ref Zhur-Biol., No 5, 1958, 22344.

Author : Telya, A. V.

Inst : Tbilissk. Med. Inst.

Title : The Antitoxic Function of the Liver in Gastric
and Duodenal Ulcers Complicated by Stenosis.

Orig Pub: Tr. Tbilissk. med. inst. 1956, 9, 363-369.

Abstract: The antitoxic liver function was determined in patients with pyloric and duodenal ulcers complicated by stenosis, by using the Quick test, as modified by Putel or by intravenous injection of benzoic acid. This function was found to be lowered in 77 (61.1%) of 126 patients. In patients with subcompensated stenosis, this liver function was decreased in 66.6%, in decompensated stenosis-100%. Gastric lavage and glucose-vitamin therapy improved the values of this liver function test.

Card 1/1

TELYAKOV, R.N.

M.P. Tushnov's histolysates in swine breeding. Veterinariia 33
no.10:82-83 0 '56. (MLRA 9:10)

1. Starshiy veterinarnyy vrach Upravleniya sovkhovov Bashkirskoy
ASSR.

(Tissue extracts) (Swine)

BORIN, A.V.; LOGAK, P.I.; TELYAKOVA, V.Sh.; MISHAKOVA, M.V.

Investigating the factors influencing the concentration effect
in optical sensitization. Zhur.nauch.i prikl.fot.i kin. 7
no.4:245-251 J1-Ag '62. (MIRA 15:8)

1. Filial Vsesoyuznogo nauchno-issledovatel'skogo kinofoto-
instituta, Kazan'.
(Photographic emulsions)

S/169/61/000/012/002/089
D228/D305

AUTHOR: Telyakova, Z. Kh.

TITLE: Results of crustal investigations in the southern part of the West Siberian Lowlands by the method of deep seismic sounding

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 12, 1961, 5, abstract 12A36 (Geologiya i geofizika, 1961, no. 7, 3-15)

TEXT: The results of crustal investigations in the Kulunda Steppe (southern part of the West Siberian Lowlands) by the method of deep seismic sounding are examined. The procedure whereby the work was carried out is stated briefly, most attention being paid to the question of interpreting the data. As a result of investigations by the method of deep seismic sounding, the seismologic characteristic of the study area has been clarified, the technique of carrying out work by the method of

Card 1/2

Results of crustal...

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D228/D305

deep seismic sounding under the conditions of the West Siberian Lowlands has been mastered, and the thickness of the crust has been determined for this area for the first time. [Abstracter's note: Complete translation.] ✓

Card 2/2

TELYAKOVA, Z.Kh.

Materials on geology and geomorphology of the Kulunda
Steppe; experience in interpreting geophysical data.
Trudy SNIIGGIMS no.17:93-98 '61. (MIRA 15:9)

(Kulunda Steppe--Geology)
(Kulunda Steppe--Geomorphology)
(Seismic prospecting)

TELYAKOVSKAYA, V.M.; TITOVA, V.D.

Traumatic psychoses with a prolonged course. Vop. psikh. i
nevr. no.9:385-390 '62. (MIRA 17:1)

1. Leningradskaya psikhonevrologicheskaya bol'nitsa imeni
Kashchenko (glavnyy vrach - I.T. Viktorov, nauchnyy ruko-
voditel' - prof. Ye.S. Averbukh).

AUTHOR: Telyakovskiy, S.A. SOV/20-121-3-8/47

TITLE: The Approximation of Differentiable Functions by the Sums of de la Vallée Poussin (Priblizheniye differentsiruyemykh funktsiy summami Valle-Pussena)

PERIODICAL: Doklady Akademiy nauk SSSR, 1958, Vol 121, Nr 3, pp 426-429 (USSR)

ABSTRACT: Let W^r be the class of the functions $f(x)$ for which $f^{(r-1)}(x)$ is absolutely continuous and almost everywhere $|f^{(r)}(x)| \leq 1$. Let $\bar{W}^{(r)}$ be the class of the conjugate functions ($r = 1, 2, \dots$). The author investigates the asymptotic behavior (for $n \rightarrow \infty$) of the expression

$$(1) \quad v_{n,m}(\mathcal{M}) = \sup_{f \in \mathcal{M}} \|f(x) - v_{n,m}(f, x)\|_0,$$

where $\mathcal{M} = W^r$ or $\mathcal{M} = \bar{W}^{(r)}$ and $v_{n,m}$ are the so-called de la Vallée Poussin sums. The author supposes the existence of $\lim_{n \rightarrow \infty} \frac{m}{n}$ which is to be equal to θ , $0 \leq \theta \leq 1$. In a very long theorem 11 cases are distinguished (in dependence on θ , n , m , r

Card 1/3

The Approximation of Differentiable Functions by the
Sums of de la Vallée Poussin

SOV/20-121-3-8/47

etc). E.g. for $0 < \theta < 1$ it is

$$V_{n,m}(W^r) = c(r, \theta) \frac{1}{n^r} + O\left(\frac{1}{n^{r+1}}\right) + O\left(\frac{\xi_n}{n^r}\right), \quad \text{where}$$

$$c(r, \theta) = \frac{2}{\pi} \int_0^\infty \left| \int_r^\infty \dots \int_1^\infty (\cos u - \cos(1-\theta)u) u^{-2} du \dots du_{r-1} \right| du_r$$

and

$$\xi_n = \left| \frac{m}{n} - 0 \right| \log \frac{1}{\left| \frac{m}{n} - 0 \right|} \quad \text{for } \frac{m}{n} \neq 0$$

$$\xi_n = 0 \quad \text{for } \frac{m}{n} = 0.$$

Results of Nikol'skiy [Ref 9] and Stechkin, under whose guidance
the paper was written, are essentially used.
There are 12 references, 10 of which are Soviet and 2 French.

Card 2/3

The Approximation of Differentiable Functions by the
Sums of de la Vallée Poussin

SOV/20-121-3-8/47

ASSOCIATION: Matematicheskiy institut imeni V.A. Steklova Akademii nauk SSSR
(Mathematical Institute imeni V.A. Steklov Academy of Sciences
of the USSR)

PRESENTED: March 27, 1958, by N.N. Bogolyubov, Academician

SUBMITTED: March 26, 1958

Card 3/3

TELYAKOVSKIY, S. A.: Master Phys-Math Sci (diss) -- "On approximations of differentiable functions by linear methods of summing Fourier series". Moscow, 1959. 9 pp (Acad Sci USSR, Math Inst im V. A. Steklov), 185 copies (KL, No 10, 1959, 122)

80207

S/038/60/024/02/05/007

16.42.00 1-4100

AUTHOR: Telyakovskiy, S.A.

TITLE: On the Approximation of Differentiable Functions ¹⁶ by Linear Means of Their Fourier Series

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya matematicheskaya, 1960, Vol. 24, No. 2, pp. 213-242

TEXT: Let W^r , $r = 1, 2, \dots$, be the class of the 2π -periodic functions $f(x)$ for which $|f^{(r)}(x)| \leq 1$ almost everywhere and $f^{(r-1)}(x)$ is absolutely continuous. Let \bar{W}^r be the conjugate class to W^r . The author investigates the approximation of $f(x) \in W^r$ or \bar{W}^r by the Λ -means of its Fourier series

$$(1.1) \quad \sigma_n(\Lambda, f, x) = \frac{\lambda_{n,1} a_0}{2} + \sum_{k=1}^{n-1} \lambda_{n,k+1} (a_k \cos kx + b_k \sin kx)$$

where Λ is the triangular matrix

Card 1/3

80207

On the Approximation of Differentiable
Functions by Linear Means of Their Fourier Series

S/038/60/024/02/05/007

$$\begin{array}{ccccccc} \lambda_{1,1} & & & & & & \\ \lambda_{2,1} & , & \lambda_{2,2} & & & & \\ \hline \lambda_{n,1} & , & \lambda_{n,2} & , & \dots\dots\dots & , & \lambda_{n,n} \\ \hline \end{array}$$

and $\lambda_{n,1} = 1$ for all n .

At first the author obtains certain representations for the deviation between $f(x)$ and $u_n(\Delta, f, x)$. These representations are used in order to obtain asymptotic formulas for

$$(1.2) \quad u_n(\Delta, \mathcal{M}) = \sup_{f \in \mathcal{M}} \|f(x) - u_n(\Delta, f, x)\|_c$$

where \mathcal{M} is either \mathcal{W}^r or $\overline{\mathcal{W}^r}$. These asymptotic formulas are then used in

Card 2/3

80207

On the Approximation of Differentiable
Functions by Linear Means of Their Fourier Series

S/038/60/024/02/05/007

order to investigate the asymptotic behavior of the upper bounds of the deviations for the approximation by de Vallee - Poussin sums. A series of older known results is proved once more.

The paper is an enlarged candidate dissertation of the author.

The author mentions A.N. Kolmogorov, S.M. Nikol'skiy, A.F. Timan, S.N. Bernshteyn, N.I. Akhiezer and M.G. Kreyn; he thanks S.B. Stechkin for advices.

There are 23 references: 11 Soviet, 6 French, 2 Hungarian, 1 American, 1 German, 1 English and 1 Danish.

PRESENTED: by S.L. Sobolev, Academician

SUBMITTED: December 26, 1958

✓

Card 3/3

16.4100 16.4200

68973

S/020/60/131/02/011/071

AUTHOR: Telyakovskiy, S.A.

TITLE: Approximation to Functions Differentiable in Weyl's Sense by de la Vallée Poussin's Sums

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 2, pp 259-262 (USSR)

ABSTRACT: Let $f(x)$ be summable and $f(x) \sim \frac{a_0}{2} + \sum_{k=1}^{\infty} (a_k \cos kx + b_k \sin kx)$.

Let $r > 0$ and α be real. If the series

$$\sum_{k=1}^{\infty} k^r \left[a_k \cos(kx + \frac{\alpha\pi}{2}) + b_k \sin(kx + \frac{\alpha\pi}{2}) \right]$$

is the Fourier series of a summable function $f_{\alpha}^r(x)$ and if almost everywhere $|f^r(x)| \leq 1$, then let $f(x) \in W_{\alpha}^r$ (compare [Ref 1]).

Let $s_n(f, x)$ be Fourier partial sums of $f(x) \in W_{\alpha}^r$ and

$$(7) \quad v_{n,m}(f, x) = \frac{1}{m} \sum_{k=n-m}^{n-1} s_k(f, x)$$

the de la Vallée Poussin's sums of $f(x)$. Let

X

Card 1/3

68973

Approximation to Functions Differentiable in S/020/60/131/02/011/071
Weyl's Sense by de la Vallée Poussin's Sums

$V_{n,m}(W_{\alpha}^r) = \sup_{f \in W_{\alpha}^r} \|f(x) - u_n(f, x)\|_C$. The author investigates the asymptotic behavior of $V_{n,m}(W_{\alpha}^r)$ for $n \rightarrow \infty$. It is assumed that there exists the $\lim \frac{m}{n}$ and that it is equal to θ , $0 \leq \theta \leq 1$. In a very long theorem the author gives asymptotic formulas for $V_{n,m}(W_{\alpha}^r)$ valid for different θ and r , e.g. if $\theta = 1$, $0 < r < 1$, then

$$(10) \quad V_{n,m}(W_{\alpha}^r) = A(\tau_{1,r}) \frac{1}{n^r} + O\left(\frac{(n-m+1)^{1-r}}{n}\right),$$

where $\tau_{1,r}(u) = \begin{cases} u^{1-r} & \text{for } 0 \leq u \leq 1 \\ u^{-r} & \text{for } 1 \leq u < \infty \end{cases}$ and $A(\tau) =$

$$= \frac{1}{\pi} \int_{-\infty}^{\infty} \left| \int_0^{\infty} \tau(u) \cos(ut + \frac{\alpha\pi}{2}) du \right| dt.$$

Card 2/3

X

68973

Approximation to Functions Differentiable in S/020/60/131/02/011/071
Weyl's Sense by de la Vallée Poussin's Sums

The obtained formulas contain and generalize results of
A.N.Kolmogorov, V.T.Pinkevich, S.M.Nikol'skiy, A.V.Yefimov,
A.F.Timan, and S.B.Stechkin.

The case $r = 0$ is considered in a second theorem.

There are 14 references, 9 of which are Soviet, 2 Hungarian,
1 French, and 2 German.

ASSOCIATION: Matematicheskiy institut im. V.A.Steklova Akademii nauk SSSR
(Mathematical Institute im.V.A.Steklov AS USSR)

PRESENTED: November 27, 1959, by A.N.Kolmogorov, Academician

SUBMITTED: November 27, 1959

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Card 3/3

33246

S/517/61/062/000/003/003

B102/B138

16.3300

AUTHOR: Telyakovskiy, S. A.

TITLE: Norms of trigonometric polynomials and approximation of differentiable functions by the linear means of their Fourier series. I

SOURCE: Akademiya nauk SSSR. Matematicheskiy institut. Trudy. v. 62. 1961. Sbornik rabot po lineynym metodam summirovaniya ryadov Fur'ye, 61-97

TEXT: The author considers functions of the class W_{α}^r ,

$f_{\alpha}^r(x) = a_0 \delta / 2 + \sum_{k=1}^{\infty} k^r (a_k \cos(kx + \alpha\pi/2) + b_k \sin(kx + \alpha\pi/2))$, where

$\delta = \cos(\alpha\pi/2)$ for $r = 0$ and integral α , $\delta = 0$ for all the other cases,

and where $|f_{\alpha}^r(x)| \leq 1$ is valid almost everywhere. The approximation of f_{α}^r

by trigonometric polynomials $u_n(f, x) = \lambda_{n,0} a_0 / 2 + \sum_{k=1}^{n-1} \lambda_{n,k} (a_k \cos kx + b_k \sin kx)$

Card 1/3

Norms of trigonometric polynomials ...

33246
S/517/61/062/000/003/003
B102/B138

is investigated. The matrix $(\lambda_{n,k})$ is assumed to be produced by a sequence of $\lambda_n(u)$ functions, $0 \leq u < \infty$, so that $\lambda_{n,k} = \lambda_n(k/n)$. The asymptotic behavior of

$$U_n(W_\alpha^0) = \sup_{f \in W_\alpha^0} \|u_n(f, x)\|_C = \sup_{f \in W_\alpha^0} \max_x |u_n(f, x)|$$

and of

$$U_n(W_\alpha^r) = \sup_{f \in W_\alpha^r} \|f(x) - u_n(f, x)\|_C$$

is studied. The residual terms of the asymptotic formulas for $U_n(W_\alpha^0)$ and $U_n(W_\alpha^r)$ contain quantities of the form

$$\sum_{k=1}^{n-1} (k(n-k)/n) |\Delta^2 \lambda_{n,k-1}| \text{ and } \sum_{k=1}^{n-1} (k(n-k)/n) |\Delta_{n,k-1}^2|$$

$(\mu_{n,k} = (1 - \lambda_{n,k})k^{-r})$, respectively. Approximation by Vallée Poussin sums is investigated in the final section of the paper. S. B. Stechkin

Card 2/3

X

33246

Norms of trigonometric polynomials ...

S/517/61/062/000/003/003
B102/B138

is thanked for assistance. A. V. Yefimov (Dokl. AN SSSR, 131, No. 2, 234-237, 1960; Izv. AN SSSR, seriya matem., 24, 743-756, 1960; 24, 431-468, 1960; Uspekhi matem. nauk, 15, vyp. 4, 215-218, 1960), A. F. Timan (Dokl. AN SSSR, 84, No. 6, 1147-1150, 1952; Izv. AN SSSR, seriya matem., 17, 99-134, 1953; Teoriya priblizheniya funktsiy deystvitel'nogo peremennogo - Approximation theory of functions of a real variable -, M., 1960), S. M. Nikol'skiy (Izv. AN SSSR, seriya matem., 12, 259-278, 1948; 4, 501-508, 1940; Trudy matem. in-ta im. V. A. Steklova AN SSSR, XV, 1945; Dokl. AN SSSR, 31, No. 3, 210-214, 1941), S. B. Stechkin (Dokl. AN SSSR, 75, 165-168, 1950), V. T. Pinkevich (Izv. AN SSSR, seriya matem., 4, 521-528, 1940), and S. A. Telyakovskiy (Dokl. AN SSSR, 121, No. 3, 426-429, 1958) are referred to. There are 35 references; 29 Soviet-bloc and 6 non-Soviet-bloc. The reference to the English-language publication reads as follows: A. Zygmund. The approximation of functions by typical means of their Fourier series. Duke Math. J. 12, 695-704, 1945.

Card 3/3

X

TELYAKOVSKIY, S.A.

Determination of derivatives of trigonometric polynomials of
several variables. Sib.mat.zhur. 4 no.6:1404-1411 N-D '63.
(MIRA 17:9)

TELYAKOVSKIY, S.A.

Norms of trigonometric polynomials and the approximation of differentiable functions by linear mean values of their Fourier series. Izv. AN SSSR. Ser. mat. 27 no.2:252-272 Mr-Apr '63. (MIRA 16:4)

1. Matematicheskiy institut imeni V.A.Steklova AN SSSR.
(Polynomials) (Fourier series)

TELYAKOVSKIY, S.A. (Moskva)

Some estimates for trigonometric series with quasi-convex coefficients.
Mat. sbor. 63 no.3:426-444 Mr '64. (MIRA 17:4)

TELYAKOVSKIY, S.A.

Integrability of trigonometric series and its application to the
study of linear methods of summation of Fourier series. Izv.
AN SSSR. Ser. mat. 28 no.6:1209-1236 N-D '64. (MIRA 18:2)

1. Matematicheskiy institut imeni V.A. Steklova AN SSSR.

TELYAKOVSKIY, S.A. (Moskva)

Norms for linear polynomial operators. Mat.sbor. 68
no.4:561-569 D '65. (MIRA 18:12)

1. Submitted October 20, 1964.

L 05201-67 EWT(d) IJP(c)

ACC NR: AP7000749

SOURCE CODE: UR/0039/66/070/002/0252/0265

TELYAKOVSKIY, S. A., (Moscow)

"Two Theorems on the Approximation of Functions by Algebraic Polynomials"

Moscow, Matematicheskii Sbornik, Vol. 70, No. 2, Jun 66, pp 252-265

Abstract: The article is devoted to refinement of the following theorem established by A. F. TIMAN: Let function f have on segment $[-1,1]$ r continuous derivatives and $\omega(\xi) = \omega(f(x), \xi)$ be the modulus of continuity of f . Then for each n there exists an algebraic polynomial p_n of degree not higher than n such that for all $x \in [-1,1]$

$$|f(x) - p_n(x)| \leq R \left(\frac{\sqrt{1-x^2}}{n} + \frac{1}{n^2} \right)^r \omega \left(\frac{\sqrt{1-x^2}}{n} + \frac{1}{n^2} \right),$$

where R is a certain positive constant dependent only on r . The refinement takes two directions. First, it is shown in Theorem 1 that if the polynomial p_n approximates the function f in such a way that the above inequality is satisfied, then for all $k = 1, 2, \dots, r$ the derivatives $f^{(k)}(x) - p_n^{(k)}(x)$

Card 1/2

UDC: 517.51

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will be evaluated by expressions of the form

$$\left(\frac{\sqrt{1-x^2}}{n} + \frac{1}{n^2} \right)^{-k} \omega \left(\frac{\sqrt{1-x^2}}{n} + \frac{1}{n^2} \right).$$

Then it is shown in Theorem 2 that the right-hand side of the above inequality can be replaced by

$$R \left(\frac{\sqrt{1-x^2}}{n} \right)^r \omega \left(\frac{\sqrt{1-x^2}}{n} \right).$$

The author notes that the hypothesis concerning the possibility of such a replacement was suggested to him by S. B. STECHKIN.

Orig. art. has: 3 formulas.

[JPRS: 37,330]

TOPIC TAGS: polynomial, function

SUBCCDE: 12 / SUBM DATE: 16Apr65 / ORIG REF: 011

Card 2/2 *gd*

TELYAKOVSKIY, Venyamin Aleksandrovich

[People of the virgin lands] Liudi tseliny. Moskva, Sovetskaya
Rossiya, 1959. 76 p. (MIRA 13:11)
(Orenburg Province--Reclamation of land)

TELYANDER, B.Ye., inzh.; NAYDA, M.L., inzh.

Experience in preliminary compensation for over-all welding
deformations in sections. Sudostroenie 24 no.11:55-58 N '58.

(MIRA 12:1)

(Ships--Welding)

TELYANKEVICH, V.S.
LAPIN, O.F.; KRUSHCHEV, M.S.; GORODINSKAYA, Ye.A.; KOCHERGINSKIY, M.M.
TELYANKEVICH, V.S.; SHARFMAN, S.D.; OSTANOV, Kh.

Improving the smelting of boron carbide. Prom.energ. 12 no.8:17-18
Ag '57. (MIRA 10:10)
(Boron carbides) (Smelting)

S/065/60/000/006/007/008/XX
E194/E484

AUTHORS: Cherednichenko, G.I., Telyashev, G.G. and Gumerov, Z.Z.

TITLE: The Production of Feed Stock for the Manufacture of Transformer Oil //

PERIODICAL: Khimiya i tekhnologiya topliv i masel, 1960, No.6,
pp.24-28 //

TEXT: A group of workers of the Novo-Ufimskiy Refinery have developed and successfully introduced a method of producing narrow cut distillate suitable for the production of transformer oil and which affords the possibility of producing low viscosity oils // grades MC-8 (MS-8) and MC-6 (MS-6). The method of producing transformer oil distillate that was initially used is described. Characteristics of the distillates obtained are given in Table 1 and it will be seen that none of them meet the requirements applicable to transformer oils distillate, which are also given. The distillate was a very broad cut and the yield was low. The refinery then began to manufacture transformer oil feed stock by secondary distillation, the procedure used is described and a schematic diagram of the scheme is shown in Fig.1. With this method the yield was 45 to 55% of the feed stock, the production of the column had to be restricted to 240 tons per day, the quality of Card 1/3

S/065/60/000/006/007/008/XX
E194/E484

The Production of Feed Stock for the Manufacture of Transformer Oil

the transformer oil distillate was satisfactory but its quantity inadequate. Investigations showed that the upper parts of the first vacuum distillation column were not adequately used and attempts were made to improve the situation both by delivering steam to the lower part of the vacuum column and by raising the inlet temperature of the feed to 415 to 420°C, but good results were not obtained. A new method was then proposed using the circuit shown in Fig.2 in which the topped crude feed was enriched with 300 to 400°C fractions. For this purpose excess of the first oil fraction was used to wash the gas oil trays of the atmospheric distillation column. Conditions became suitable for more complete extraction of the diesel fuel fractions. The quality and fractional composition of the second fraction were stabilized and the flash point raised, the properties of the second fraction are given. In order to obtain transformer oil distillate of suitable viscosity it was necessary to reduce the end boiling point of the diesel fuel. In this way fully satisfactory transformer oil distillate was obtained. At present two plants are using the circuit of Fig.2, satisfactory transformer oil is being

Card 2/3

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S/065/60/000/006/007/008/XX
E194/E484

The Production of Feed Stock for the Manufacture of Transformer Oil manufactured and an experimental batch of oil grade MS-8 is being produced. The quality of the transformer oil distillate is easily adjusted by altering the final boiling point of the diesel fuel. There are 2 figures and 2 tables.

ASSOCIATION: NU NPZ



Card 3/3

SAITGAREYEV, F.Sh.; TELYASHEV, G.G.; SHAYMARDANOV, N.M.; SALOV, V.S.;
KIREYEV, A.G.

Intensifying the operations of industrial furnaces. Trudy
BashNII NP no.6:226-240 '63. (MIRA 17:5)

S/123/59/000/09/11/036
A002/A001

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1959, No. 9, p. 32,
33542

AUTHOR: Telyatitskiy, S. L.

TITLE: Checking the Generation in Small-Module Bevel Gears 17

PERIODICAL: Radiotekhn. proiz-vo, 1957, No. 12, pp. 39-43

TEXT: A self-generating machine is described for checking the teeth contact areas of two conjugated gears. A detailed enumeration is given of the different errors in longitudinal and profile contacts and the various possible combinations of them. Recommendations for correcting errors in the contact zones are given to the adjuster of gear hobbing machines and gear planing machines for checking gears. There are 22 figures.

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

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TELYATNIK, A.I. [Teliatnyk, A.I.]; SHUL'GA, S.Z. [Shul'ha, S.Z.]

Effect of oxygen on the electronic paramagnetic resonance
of some coals at low temperatures. Ukr.fiz.zhur. 7
no.1:86-87 Ja '62. (MIRA 15:11)

1. Institut fiziki AN UkrSSR, Kiyev.
(Coal)
(Paramagnetic resonance and relaxation)
(Oxygen)

SHUL'GA, S.Z. [Shul'ha, S.Z.]; TELYATNIK, A.I. [Teliatnyk, A.I.];
TARANUKHA, O.K.; SIDORIK, Ye.P. [Sydoryk, IE.P.]

Electron paramagnetic resonance spectra of certain γ -irradiated
amino acids over a wide temperature range. Ukr. fiz. zhur. 8
no.4:460-468 Ap '63. (MIRA 16:8)

1. Institut fiziki AN UkrSSR, Kiyev.
(Paramagnetic resonance and relaxation)
(Amino acids—Spectra)
(Gamma rays)

SHUL'GA, S.Z. [Shul'ga, S.Z.]; TELIATNIK, A.I. [Teliatnyk, A.I.]

Use of the electron paramagnetic resonance method in studying
the structure and orientation of the stabilized free radicals
in γ -irradiated, d,l-valine single crystals. Ukr. Fiz. zhur.
no.2:185-191 F'64 (MIRA 17:7)

1. Institut fiziki AN UkrSSR, Kiyev.

TELYATNIKOV, A.F.

Switching equipment for crane rails. Bul. tekhn. inform. 4 no.5:
28-29 My '58. (MIRA 11:8)

1. Starshiy inzhener stroytresta No.20.
(Cranes, derricks, etc.)

TELYATNIKOV, B.I.; KURGAPKIN, V.I.

Redesigning of the communication systems in conjunction with the electrification of the Northern Caucasus Railroad. Avtom., telen.i svias' 6 no.11:27-28 N '62. (MIRA 15:11)

1. Nachal'nik slushby signalizatsii i svyazi Severo-Kavkazskoy dorogi (for Telyatnikov).
(Caucasus, Northern—Railroads—Electrification)
(Caucasus, Northern—Railroads—Communication systems)

BONDARENKO, Nikolay Antipovich; TELYATNIKOV, B.I., inzh., retsenzent;
TIKHONEVICH, B.Z., inzh., retsenzent; NOVIKAS, M.N., red.;
VOROB'YEVA, L.V., tekhn. red.

[Mechanization of work in communications cable-laying operations] Mekhanizatsia rabot pri prokladke kabelei sviazi.
Moskva, Izd-vo "Transport," 1964. 157 p. (MIRA 17:4)

NAZAROV, B I.; TELYATNIKOV, B.M., red.

[Gyroscope in a rocket] Giroskop na rakete. Moskva, Voen-
izdat, 1964. 101 p. (MIRA 17:7)

TELYATNIKOV, B.P., insh.

Overland transportation of large pump dredges. Mekh. stroi. 17
no.12:5-7 D '60. (MIRA 13:12)
(Dredging machinery)

BARANOV, V. A.; TELYATNIKOV, B. P.

The new ShU-PCM-2 piler for sand, gravel and crushed stone.
Bul. tekhn. inform. Inst. "Proektgidromekh." no.1:33-38 '62.
(MIRA 16:1)

(Sand and gravel plants—Equipment and supplies)
(Crushed stone industry—Equipment and supplies)

ANDREYEV, A.S.; MARSHIKOVA, A.; TELYATNIKOV, G.V.

Determination of magnesium and calcium in primary aluminum
and aluminous materials (bauxites). Trudy LPI no.201:51-55
'59. (MIRA 13:3)
(Magnesium--Analysis) (Calcium--Analysis) (Bauxite)

YUZHANINOV, I.A.; TELYATNIKOV, G.V.; BEKHTEV, G.I.; KNYAZEV, A.T.;
KOROLEVA, A.A.

Testing a three-chamber fluidized bed cooler for the cooling of
alumina. TSvet. met. 36 no.6:50-55 Je '63. (MIRA 16:7)

(Fluidization—Cooling)
(Aluminum oxide—Cooling)

ARLYUK, B.I.; TELYATNIKOV, G.V.; YUZHANINOV, I.A., rukovoditel' raboty;
Prinimali uchastie: KOROLEVA, A.A.; VDOVIN, L.V.

Material carried away from a fluidized bed. TSvet. met. 36
no.7:48-51 J1 '63. (MIRA 16:8)
(Fluidization) (Fly ash)

TELYATNIKOV, I.I.; KHANIN, M.A., dotsent; TANYBEKOV, M.A., assistant,
zashchenny veterinarney vrach Kazakhskoy SSR

"Bloodless" method for the castration of animals. Veterinariya
41 no.10:52-55 O '62. (MIRA 18:11)

1. Glavnyy veterinarney vrach sovkhosa "Ufimskiy" Bashkirskoy
ASSR (for Telyatnikov). 2. Alma-Atinskiy zootekhnicheskoy
veterinarney institut (for Khanin).

ROMBRO, S.Ya.; TELYATNIKOV, I.P.

Use of television at the ammonium nitrate plant of
the Lisichansk Chemical Combine. Khim.prom. no.4:
310-314 Je '60. (MIRA 13:8)

1. Gosudarstvennyy institut azotnoy promyshlennosti.
(Lisichansk—Ammonium nitrate)
(Industrial television)

TELYATNIKOV, I.P., inzhener

Automatic ammonium pressure regulator. Khim.prom.no.5:140-141
My '47. (MLRA 8:12)

(Pressure gauges) (Ammonium)

S/064/60/000/004/013/021/XX
B013/B063

AUTHORS: Rombro, S. Ya., Telyatnikov, I. P.

TITLE: Application of Television in the Ammonia Saltpeter Division
of the Lisichanskiy khimicheskiy kombinat (Lisichansk
Chemical Combine)

PERIODICAL: Khimicheskaya promyshlennost', 1960, No. 4, pp. 46-50

TEXT: This is a report on the installation of a TV system in the ammonia saltpeter division of the Lisichanskiy khimicheskiy kombinat (Lisichansk Chemical Combine). The full automation of this division was carried out mainly by the Lisichanskiy filial OKBA (Lisichansk Branch of OKBA) in 1958. The TV system is used to control the decanting and packing of ammonia saltpeter. It has been developed on the basis of an industrial TV system of the type ПТУ-ОМ (PTU-OM) developed by the Laboratoriya avtomatiki GIAP (Automation Laboratory of GIAP). This system was mass-produced until 1958 by the Moskovskiy televizionnyy zavod (Moscow Television Plant). The redesigned TV camera consists of the pick-up, the

Card 1/3

Application of Television in the Ammonia
Salt peter Division of the Lisichanskiy
khimicheskii kombinat (Lisichansk
Chemical Combine)

S/064/60/000/004/013/021/XX
B013/B063

transmitting camera which is housed in a casing of stainless steel and mounted on a turntable. Four lines connect the camera with the БПУ (VPU) TV receiver and the switchboard in the control room. The angular velocity of the turning of the camera was considered in redesigning the camera. In addition, an automatic device has been developed for the regulation of the optimum voltage on the signal electrode of the transmitter valve with respect to illumination. A photoresistor of the type ФС (FS) is used as photosensitive element. The circuit diagram of the automatic controller makes it possible to maintain the optimum voltage on the signal electrode of the transmitter valve at a ratio of 1:60 when changing illumination. The transmitter valve of the type ЛМ-23 (LI-23) has a lifetime of 500 hrs. It is therefore necessary to switch on the system only for a short time. Its long response time (1.5-2 min; optimum after 10-15 min) makes it necessary to work out detailed operating conditions. The scheme developed for the operating conditions in the packing division of LKhK has shown that it is most

Card 2/3

Application of Television in the Ammonia
Saltpeter Division of the Lisichanskiy
khimicheskiy kombinat (Lisichansk
Chemical Combine)

S/064/60/000/004/013/021/XX
B013/B063

effective to have the TV set switched on for only a short time. The wear of transmitter and thermionic valves is thus reduced, and the performance of the system is improved. Illumination could be improved by means of an additional lamp of 200 w, whereby a sufficiently strong light (30-40 lux) was attained for the image reproduction. The TV system of the packing division of LKhK has been in operation since October 1958. A technical inspection in May 1959 confirmed the perfect condition of the system. The long service life of the LI-23 transmitter valve was striking. The operation time of the system was recorded by a special counter. Between October 1958 and November 1959 the system was in operation for 1500 hrs. There are 6 figures.

ASSOCIATION: GIAP (State Design and Planning Scientific Research
Institute of the Nitrogen Industry)

Card 3/3

Телыатников, Л. И.
TELYATNIKOV, L. I.

"An Examination of Amplitude Stability of Superhigh-Frequency Triode Self-Oscillators, pp 100-111, 111, 3 ref

Abst: A study is made of the methods of analysis of the stability of triode self-oscillators operating under conditions of high transit angles of electrons in the tube. The basic causes of the limitation of amplitude of oscillations in the oscillators under consideration are examined.

SOURCE: Trudy MAI im. S. Ordzhonikidze MVO SSSR (Works of the Moscow Aviation Institute imeni S. Ordzhonikidze of the Ministry of Higher Education USSR), No 73, Problems of Radio Engineering of Superhigh Frequencies, Moscow, Oborongiz, 1957

Sum 1854

TELYATNIKOV, L I.

p. 3

PHASE I BOOK EXPLOITATION

80V/3873
80V/11-N-98

Moscow. Aviatsonnyy institut im. Sergo Ordzhonikidze

Voprosy radiotekhniki i elektroniki sverkhvysokikh chastot; sbornik statey
(Problems in Super-High Frequency Radio Engineering and Electronics;
Collection of Articles) Moscow, Oborongiz, 1958. 81 p. (Series: Its:
Trudy, vyp. 98) 15,210 copies printed.

Ed.: (Title page): M.S. Neyman, Doctor of Technical Sciences, Professor;
Ed. (Inside book): V.N. Dulin, Candidate of Technical Sciences; Managing
Ed.: A.S. Zaymovskaya, Engineer; Ed. of Publishing House: I.A. Suvorova;
Tech. Ed.: V.P. Rozhin.

PURPOSE: This collection of articles is intended for engineers and scientific
workers in the fields of radio engineering and electronics, and advanced
students of schools of higher technical education. It may also be of interest
to large numbers of radio specialists.

COVERAGE: This collection of articles contains the results of research carried
out in 1955-56 at the Department of Radio Transmitters of the Moscow Aviation

Card 1/3

Problems in Super-High Frequency (Cont.)

BOV/3873

Institute imeni Sergo Ordzhonikidze. The articles cover the fields of waveguide systems, ribbed electrodynamic structures, and modulation of self-excited oscillators. No personalities are mentioned. References accompany each article.

TABLE OF CONTENTS:

Foreword

3

Myakishev, B.Ya. Investigation of Reflecting Properties of Ribbed Surfaces Obliquely Irradiated by a Plane Electromagnetic Wave.

This article deals with the calculation and experimental investigation of reflectance of an electromagnetic wave falling on a ribbed metal surface. It was found that at a groove depth of approximately one-quarter wave the phenomenon of depth resonance occurs. Simple analytical expressions for amplitudes and phases are given for narrow grooves, while numerical results are given for large grooves. There are 4 references, all Soviet.

5

Card 2/3

Problems in Super-High Frequency (Cont.)

SOV/3873

Telyatnikov, L.I. Distortion of Amplitude-Modulated
Oscillations as a Result of Spurious Frequency Modulation.

The article presents the theory and gives various cases of amplitude-modulated self-excited oscillators having spurious simultaneous frequency modulation. There are 3 references, all Soviet.

31

Voskresenskiy, D.I. Resonance Measurement Method for Waveguide Irregularities Which Cause Slight Reflection.

The article examines a new method of measuring waveguide and feeder reflectance coefficients when the latter are less than one percent. There are 3 references, all Soviet.

64

AVAILABLE: Library of Congress

Card 3/3

KM/rlm/mas
7-26-60

TELYATNIKOV, L. I.: Master Tech Sci (diss) -- "Investigation of the spectra of amplitude-modulated oscillations in the presence of additional frequency or phase modulation". Moscow, 1958. 9 pp (Min Higher Educ USSR, Moscow Order of Lenin Aviation Inst im Sergo Ordzhonikidze, Chair of "Radio Transmitting Equipment"), 150 copies (KL, No 11, 1959, 120)

88-58-98-3/4

AUTHOR: Telyatnikov, L.I. Engineer

TITLE: Distortion of Amplitude-modulated Oscillations Due to Parasitic Frequency Modulation (Iskazheniye amplitudno-modulirovannykh kolebaniy vsledstviye parazitnoy modulyatsii chastoty).

PERIODICAL: Trudy Moskovskogo aviatsionnogo insituta, 1958, Nr 98; Problems in Superhigh-frequency Radio Engineering and Electronics (Voprosy radiotekhniki i elektroniki sverkhvysokikh chastot), pp 31-63 (USSR).

ABSTRACT: When the master oscillators of single-stage transmitters are amplitude-modulated there inevitably occurs parasitic frequency modulation. The change in the spectrum of the amplitude-modulated oscillation due to parasitic frequency modulation depends on the relationship between the two types of modulation. A

Card 1/7

Distortion of Amplitude-modulated Oscillations (Cont.) 88-58-98-3/4

discussion of this relationship is presented in the sections which follow. The analytical expressions for construction of the oscillation spectra in amplitude-frequency modulation are derived and an example of the spectrum construction is given in Fig. 1, p. 35. Fig. 1(a) shows the spectrum for amplitude modulation, Fig. 1 (b) gives the frequency-modulation spectrum, Fig. 1 (c thru i) represents spectra of frequency-modulated oscillation components which are amplitude modulated, and Fig. 1 (j) gives the spectrum of amplitude-frequency modulation as a result of amplitude summation. It is explained that the oscillation spectrum for inphase amplitude-frequency modulation by a single signal is a spectrum of frequency-modulated oscillations in which the amplitude of each n-th order upper sideband is increased by the factor $J_m(\beta)$ where m is the degree of amplitude modulation, β is the index of frequency modulation, and $J_m(\beta)$ is the Bessel function of the first kind and the nth order with argument β . The amplitude of the nth order lower sideband is decreased by the same factor. When a signal is amplitude-modulated with the presence of parasitic frequency modulation the following is observed: the amplitude of the carrier frequency decreases, high-order sidebands are formed in the frequency spectrum; the amplitude

Card 2/7

Distortion of Amplitude-modulated Oscillations (Cont.) 88-58-98-3/4

of the first-order upper sideband increases while the lower sideband amplitude decreases. The variation of the relative amplitudes of the carrier wave and the first three sidebands with the relative frequency modulation for various values of m is presented in Fig. 2, p. 37. Fig. 2 (a) presents the variation of the carrier, Fig. 2 (b) gives the variation of the first-order sidebands, Fig. 2 (c) shows the variation of the second-order sidebands, and Fig. 2 (d) gives the variation of the third-order sidebands. The variation of sideband amplitudes with the absolute value of the relative frequency of modulation is shown in Fig. 3, p. 38. In Fig. 3 are shown:

- (a) the variation of the first-order sidebands
- (b) the variation of the second-order sidebands
- (c) the variation of the third-order sidebands

On page 41, Fig. 4, the relationship between the amplitude of the sidebands and the distance from the carrier to the sidebands is shown. The variation of the degree of modulation frequency is

Card 3/7

Distortion of Amplitude-modulated Oscillations (Cont.) 83-58-98-3/4

given in Fig. 5, p. 42. On p. 43 the calculation of the α parameter for electron tube self-oscillator is tabulated, where α is the frequency deviation at 100% amplitude modulation by a single signal. The analytical expressions for spectrum construction in simultaneous amplitude-frequency modulation by a sum of non-multiple frequencies are derived. It is stated that the oscillation spectrum for amplitude-frequency modulation by a sum of non-multiple frequencies can, as in section 2 of this article, be represented as the frequency-modulation spectrum and, hence, the relationships obtained with the single modulating frequency can be applied here. In Fig. 6, p. 49, the oscillation spectra of amplitude-frequency modulation by five non-multiple frequencies with the ratio of 1: $\sqrt{2}$: $\sqrt{3}$: $\sqrt{5}$: $\sqrt{7}$ for $m_0=2$ and various values of $\frac{\alpha \Delta f}{\Omega_c}$ is given. Here Ω_c is the maximum value of the difference between the carrier and sidebands frequencies. In Fig. 6(a) the spectrum for amplitude modulation is given for comparison. The expressions for the amplitudes of the sidebands are derived and the spectra of oscillation for amplitude-frequency modulation by rectangular pulses for $\tau/T=0.2$ and various values of $\frac{\alpha \Delta f}{\Omega_c}$ are

Card 4/7

Distortion of Amplitude-modulated Oscillations (Cont.) 88-58-98-3/4

shown in Fig. 7, p. 52. Here, τ is the width of the pulse and T is the period of oscillation. For the purpose of comparison the spectrum of amplitude-modulated oscillation is given by dotted lines in the same figure. It is concluded that: (1) The amplitude of the major lobe is constant while the minor lobe amplitudes change. (2) Wave distortion depends only on the pulse width. It is explained that analytical determination of the oscillation spectrum for simultaneous amplitude-frequency modulation by spurious signals can be made either by the method of functional correlation or by representing the spurious signals as a sum of harmonic components. The former method is not presented in the article. Derivation of the expression for the energy intensity of the spectrum components is given by the second method, and the variation of the relative values of energy intensity with a relative change in frequency is shown in Fig. 8, p. 59. Reference is made to the work of I.S. Gonorovskiy who, by means of functional correlation, considered frequency modulation by a spurious signal.

Card 5/7

Distortion of Amplitude-modulated Oscillations (Cont.) 88-58-98-3/4

The relationship between the spectrum distribution of the relative energy intensity and the relative frequency change was determined and the results for $m_{eff}=0.33$ and various values of $\frac{\alpha_{AF}}{\Omega_0}$ were plotted. The graph appears in Fig. 9, p.61. The discussion of the spectrum distortion of an amplitude-modulated oscillation by a spurious signal due to parasitic frequency-modulation can be summarized as follows: (a) the power of the sidebands increases and it is distributed unequally, (b) the relationship between the spectrum energy intensity of any pair of frequencies is the same as that of the squares of amplitudes in the case of modulation by a single signal. The distortion of the spectrum of amplitude-modulated oscillations due to parasitic frequency-modulation is characterized by a power decrease of the lower and upper sidebands during inphase and out-of-phase modulation, respectively. The spectrum of the amplitude-modulated oscillation when parasitic frequency-modulation is present depends on the α_{AF} parameter and the modulating frequency Ω_0 . In all cases, except for modulation by multiple frequencies, the spectrum asymmetry does not depend on

card 6/7

Distortion of Amplitude-modulated Oscillations (Cont.) 88-58-98-3/4
the type of signal. There are 9 figures in the article. There are
3 Soviet references(including 1 translation).

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Card 7/7

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AUTHORS: Neyman, M.S., Telyatnikov, L.I. and Zemtsov, G.P.

TITLE: Investigation of flip-flops and registers for the
amplitude system of digital computing

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
Radiotekhnika, v. 4, no. 4, 1961, 388 - 397

TEXT: One of the authors analyzed in two earlier papers
(Ref. 1 - Radiotekhnika, 1960, 15, no. 3, 7; Ref. 2 - -do-
No. 10, 3) the general problems of designing digital-computing
elements based on radio pulses instead of the usual video
pulses. Such systems can use amplitude, frequency, phase and
combined methods of recording and processing of information.
Some experimental results of an investigation of the basic
amplitude-type binary systems are described in the following.
The elements of the flip-flops and registers are based on over-
excited oscillators. The experimental oscillator was based on
a vacuum tube, type 6H8 (6N8), with series supply in the grid
and parallel supply in the anode circuit. The oscillator
operated at a frequency of 7 Mc/s. One of the important

Card 1/6₅

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S/142/61/004/004/001/018

E192/E382

Investigation of flip-flops....

characteristics of such an oscillator is its output voltage-amplitude U_g at the grid circuit as a function of the negative bias applied to the grid, with the anode voltage E_a as a parameter. A set of such control curves for various E_a is shown in Fig. 15 for the coupling coefficient $K = 1.8$ (coupling between anode and grid circuits). It is seen that, depending on the grid bias voltage, the oscillator can behave as a bistable element. On the basis of Fig. 1, it is possible to determine the width ΔE_g of the bistable zone for various anode voltages. It was also found experimentally that the amplitude of the oscillations was a loop-form function of the anode supply voltage. The width of the bistable zone as a function of the anode voltage is greater than the width as a function of the grid bias voltage. Changeover of the above type of flip-flop (switching circuit) can be effected by means of an external video pulse, radio pulse or both, provided the system operates within the bistable zone. If the triggering is

Card 2/65-

31980
S/142/61/004/004/001/018
E192/E382

Investigation of flip-flops

done by a radio pulse, this should produce forced oscillations in the system, whose amplitude should exceed a certain threshold level. Further, the radio pulse should transfer to the system an energy not less than $(1/2)CU^2$, where U is the amplitude of the threshold voltage and C is the equivalent capacitance of the oscillatory system. The fact that the amplitude-type flip-flop can be controlled either by a radio pulse or by changing its supply voltage can be taken into account in the design of a binary register with an amplitude system of information-storage. Triggering of the flip-flop by means of radio pulses makes it possible to transfer the "state" of a preceding flip-flop to the next unit, while by using video-pulse modulation at the supply side each flip-flop can be returned to its original state. In the case of triode flip-flops, the modulation can be effected at the anode as well as at the grid. The registers can be of the following three types, depending on the inter-coupling elements between the flip-flops:

- a) register with delay lines;
- b) register with two flip-flops in each stage and
- c) register with three flip-flops in each

Card 3/6

31940
S/142/61/004/004/001/018
E192/E382

Investigation of flip-flops.....

stage. The first flip-flop A is the fundamental element in the register of the second type, while the second trigger B forms the coupling element. The modulating voltage is applied to the fundamental and coupling elements in anti-phase. The modulating voltage is applied to the elements with a phase-shift of 120° in the case of a three-flip-flop register. A register element of the second type was investigated experimentally, the circuit diagram of the system being shown in Fig. 13. The potentiometers R_1 in the circuit were used for setting the mean levels of the biases and the amplitudes of the modulating voltage for each of the oscillators. The lefthand-side oscillator was triggered by an external source, operating at 7 Mc/s. The righthand-side oscillator was triggered by radio pulses derived from the lefthand-side oscillator via the capacitances C_{CB1} and C_{CB2} and the diode Δ connected in parallel. The diode was employed principally for directional decoupling of the system. The experiments showed that a satisfactory operation requires that the directional decoupling be at least 10. If the decoupling were lower, a spurious triggering of the lefthand-side oscillator

Card 4/65

Investigation of flip-flop....

31980
S/142/61/004/004/001/018
E192/E382

by the righthand-side oscillator could take place. The above experiments confirmed the possibility of employing the amplitude-type binary switching circuits and registers as reliable computing elements.

There are 14 figures and 8 references: 4 Soviet-bloc and 4 non-Soviet-bloc. The four English-language references mentioned are: Ref. 3 - E. Goto - PIRE, 1959, 47, no. 8, 1304; Ref. 4 - R.L. Wigington - PIRE, 1959, 47, no. 4, 516; Ref. 5 - F. Sterzer - PIRE, 1959, 47, no. 8, 1317; Ref. 6 - Transactions of IRE, 1959, EC-8, no. 3. X

ASSOCIATION: Kafedra Moskovskogo aviatsionnogo instituta
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SUBMITTED: December 6, 1960

Card 56-

TELYATNIKOV, L.I.

Theory of the high-speed operation of amplitude triggers. Trudy
MAI no.149:38-51 '62. (MIRA 15:12)
(Pulse techniques (Electronics))

NEYMAN, M.S.; TELYATNIKOV, L.I.; ZEMTSOV, G.P.

Study of triggers and shift registers for amplitude-type
sampled-data systems. Trudy MAI no.149:23-37 '62. (MIRA 15:12)
(Pulse techniques (Electronics))
(Electronic computers)

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E192/E382

9.2540

AUTHOR: Telyatnikov, L.I.

TITLE: The theory of the response speed of radio-pulse
amplitude trigger circuits

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy,
Radiotekhnika, v. 5, no. 2, 1962, 158 - 169

TEXT: The radio-pulse trigger circuits described in an
earlier work of the author, M.S. Neyman and G.P. Zemtsov
(Izv. vuzov SSSR - Radiotekhnika, v. 4, no. 4, 1961, 388) are
based on sinusoidal oscillators having two stable states:
absence of oscillations and an oscillatory operating regime.
The important practical parameter of such a circuit is its
response speed, which is determined by the rise and decay
times of the oscillations in the circuit. An attempt is made
to determine these times under the assumption that the trigger
is based on a vacuum tube. First, it is shown that the rate of
rise V_a of the grid voltage, when the circuit is actuated,
is expressed by:

Card 1/5

S/142/62/005/002/002/019
E192/E382

The theory of ..

$$V_a = \frac{d \bar{U}_g}{dt} = \frac{1}{\frac{d U_g}{dt}} = \alpha \left[\frac{S_{cp}}{S_{yct}} - 1 \right] U_g \quad (3)$$

where α is the damping coefficient of the resonant circuit of the oscillator,

S_{cp} is the average slopt of the tube,

$S_{yct} = 1/R_a K_{oc}$,

R_a is the equivalent resistance between the anode and the cathode of the tube at the operating frequency,

K_{oc} is the modulus of the coupling or feedback coefficient and

U_g is the high-frequency voltage amplitude at the grid.

The time $\tau_{\bar{U}_g}$ during which the amplitude of the oscillations of the circuit increases K_u times (where K_u is the voltage

Card 2/5

S/142/62/005/002/002/019
E192/E382

The theory of

gain of the system) can be conveniently expressed by the number of periods $N = \tau_o / T$, where T is the period of the signal generated by the oscillator. A formula for N_o is derived and its minimum value is given by:

$$N_o \min = \frac{1}{\pi} \frac{K_u - 1}{S_{cp \max} K_{oc} - \frac{1}{Q}} \quad (9)$$

where τ_o is the characteristic resistance of the oscillatory circuit, and

Q is its quality factor.

Calculations for a tube operating at 800 kc/s show that $N_o \min \approx 15T$. The response speed of the trigger circuit can be estimated by the ratio of its triggering frequency F_T to the frequency f_{Tp} of its oscillations. This ratio can also be

Card 3/5

S/142/62/005/002/002/019
E192/E382

The theory of

defined by:

$$\nu = \frac{T}{\tau_{cn} + \tau_{cn}} = \frac{1}{N_{\min} + N_{\max}} \quad (11)$$

where τ_{cn} is the decay time of the oscillations in the system. An explicit expression for ν is derived and it is shown that there exists an optimum value of Q at which ν has a maximum value. For a normal radio-pulse trigger circuit ν_{\max} is of the order of 0.03. The analysis shows that the limiting operating speed of the trigger is determined by the slope of the tube, the feedback coefficient and the resistance of the resonant circuit. Secondly, for maximum operating speeds it is necessary to choose optimum actuation conditions and the optimum value of the quality factor of the system. In general, the operating rates can be about twenty to thirty times lower than the natural frequency of the trigger circuit, so that at a frequency of 10 kMc/sec the operating (switching) frequency is

Card 4/5

The theory of

S/142/62/005/002/002/019
E192/E382

of the order of 300 - 500 Mc/s. There are 9 figures.

AUTHOR: Kafedra Moskovskogo ordena Lenina aviatsionnogo
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SUBMITTED: July 13, 1961

Card 5/5

L 18459-66 EMT(d)/EWP(1) IJP(c) BB/CG
ACC NR: AP6006383 SOURCE CODE: UR/0413/66/000/002/0115/0116

INVENTOR: Gol'berg, I. Ye.; Zemtsov, G. P.; Telyatnikov, L. I.

ORG: none

TITLE: An rf pulse-amplitude flip-flop based on tunnel diodes. Class 42, No. 178169

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1966, 115-116

TOPIC TAGS: flip flop circuit, tunnel diode, rf pulse, logic element

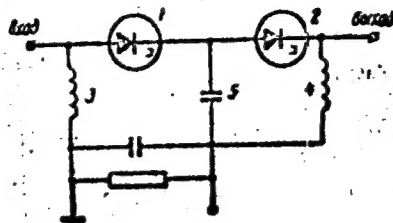
ABSTRACT: This Author's Certificate introduces: 1. An rf pulse-amplitude flip-flop based on tunnel diodes. To provide decoupling between the input and output and to simplify the design of logic circuits, the device contains two inductances which make up two tank circuits, two series-connected tunnel diodes in the supply circuit, and a blocking capacitor for high frequency decoupling of the tank circuits. 2. A modification of this flip-flop which contains a single inductance connected between the input and output for high frequency decoupling of the tunnel diodes.

Card 1/2

UDC: 681.142.07

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ACC NR: AP6006383



1 and 2 - tunnel diodes; 3 and 4 - tank circuit inductances;
5 - blocking capacitor.

SUB CODE: 09/ SUBM DATE: 08Feb64

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